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A Preliminary Study of Some Possible Inconsistencies Between Reported Dental Insurance Claims for Crown and Bridge Materials and Reported Production and Use of Those Materials

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WP 1459-83

August 1983

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A Preliminary Study of Some Possible Inconsistencies Between Reported Dental Insurance Claims for Crown and Bridge Materials and Reported Production and Use of Those Materials

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1. Introduction

Pre-payment for dental care is one of the fastest growing segments of health insurance. As such--like all other growth activities--it has generated some complex problems that must be considered. This paper addresses one such issue, essentially on the basis of a statistical examination of the available data.

Today, as the result of individual, company or union plans, some 92 million Americans have the benefits of pre-paid dental health insurance available to them to one degree or another. The extent of the coverage of each plan dictates the specific benefits that will be paid for. Each plan also defines what levels of payment will be provided for the covered benefits.

Despite variations in the coverages and the benefits, the increasing availability of dental insurance plans has great social and economic significance. By this means, more people are given the opportunity to improve their dental health with a minimum of high unexpected out-of-pocket costs. At the same time, dental insurance plans increase the numbers of people to whom dentists can provide their professional services, and be assured of adequate payment for those services.

At issue in this paper is that area of specialized service which involves the need for what is identified as crown-and-bridge work, and for which most dental insurance plans provide total or partial payment. This service becomes necessary when a tooth--or a group of teeth--must be rebuilt. Given the enormous forces exerted by the jaw and the critical

issue of personal appearance, the result must be both maximally functional, and cosmetically acceptable. Dentists have the option of choosing from a number of materials from which these crowns or bridges can be made. These vary from precious materials made of high content gold, to semi-precious metals composed of lower content gold and/or palladium, to non-precious base metals like nickel, stainless steel and/or chrome. The cost varies accordingly.

This study--using what data was immediately available and, at the same time, making certain assumptions--reports and analyzes the examination of dental insurance claims for such services, and the materials reported as being used for such work.

2. A Review of the Data

The immediately available data for this preliminary study were obtained from the Health Insurance Association of America (HIAA). These data represent the 1978, 1980, and 1982 dental charges recorded by the Prevailing Healthcare Charges System (PHCS), which is the computerized system developed by the HIAA to compile, edit and summarize dental charges as defined by its own code of Dental Procedures and Nomenclature.

The data base on which PHCS operates includes only claims information submitted by HIAA member companies participating in the program. It does not include the data from non-participating HIAA member companies, nor any of the claims and charges made under Blue Cross/Blue Shield, Medicare, Medicaid and the Delta Plans. It is estimated by the HIAA that its data base includes some 60 percent of the volume of dental health insurance purchased in the country today.

The insurance claims of the crown-and-bridge procedures used were crosstabulated with metal types and years, as shown in Table 1. For each metal type, the total number of charges for each year is shown in Table 2.

These summary statistics indicate that the percentage of crown-and-bridge work using gold or semi-precious metal dropped from 98.6% in 1978, to 83.1% in 1982, while the actual number of claims for such work increased from 2.14 million to 3.34 million.

The significant decrease in the percentage of use of precious and semi-precious metals, can speculatively be attributed to the increase and fluctuations in the gold market prices during that period. However, during those same years, there were a number of major discoveries, developments and improvements in so-called "non-precious" metals, which were rapidly introduced and used in the country's dental laboratories. In addition, statistics indicate an enormous increase--from 58 million to 92 million--in the number of people covered by dental health insurance benefits between the years 1978 and 1982.

These latter facts and figures can be assumed to have also contributed in large measure not only to the increase in the work done in this specialized area of dentistry and the number of claims, but to the marked difference between the use of precious and non-precious metals.

A report speaking to this issue appeared in the February, 1983 issue of Dental Laboratory Review. Entitled "State of the Industry Finds Business Healthy Despite the Recession Burdens", by Mac Overmyer, it cited the data produced by the annual survey of that publication. Included

in that data was the fact that the number of dental laboratories using non-precious metals had risen from 29% in 1978, to 69% in 1982.

Another report of a total of 368 dental laboratories--that can be characterized only as a "confidential in-house survey done by an unidentified dental products manufacturer"--indicated that the ratio of precious to non-precious metal useage in those laboratories was 32.5% to 64.8% in 1982.

Those percentages were essentially supported by industry experts who were contacted informally. They agreed that a conservative estimate of the precious to non-precious ratio in 1982 was very close to those figures. They actually put their estimate at 40% for precious alloys, and 60% for non-precious.

Comparing the foregoing facts with the 83.1% figure shown in Table 2 as the percentage of crown-and-bridge charges attributed by the HIAA data to precious and semi-precious, leads to a conclusion that produces some inconsistencies.

By applying certain assumptions to those facts, the possible significance of those inconsistencies can be highlighted, and the implications further spelled out by some relatively simple calculations. One assumption is that the experts were correct and, in fact, only 40% of the 1982 crown-and-bridge claims actually used precious metals. If so, one must conclude that some of the 83.1% of claims, as shown by the HIAA data, for precious and semi-precious metals might have been for other types of metals.

The calculations deriving out of those assumptions would indicate that 43.1% of the 4 million crown-and-bridge procedures were charged as "precious" when, in fact, something other than precious metals of any type were actually used. Then, using a conservatively estimated price differential between precious and non-precious of $40 per case, the foregoing discrepancies could be calculated as $69 million of inappropriate charges to the insurance companies by whom the claims were paid.

3. The Need for Further Analysis

Based on the charges submitted by dentists to the HIAA member companies, 83.1% of the 1982 crown-and-bridge work they ordered used precious metals. On the other hand, information from a variety of sources indicated that the 1982 percentage of precious metals would probably not have exceeded 40%. If this is true, the insurance companies overpaid claims by some $69 million. There are, however, some further considerations.

First, based on the enormous increase in the number of people covered by dental insurance, the available data indicate that the amount of crown-and-bridge work done over the past several years has continued to increase, and that the demand for this type of service will continue. This fact, and the data generated by it, can also be expected to continue to make these analyses difficult.

Second, the HIAA records reviewed did not include a number of the other member companies, charges made to Blue Cross/Blue Shield, Medicare, Medicaid or the Delta Health Plans. Also not included were the data

representing uninsured cases. Therefore, some of the discrepancies could have arisen if the precious vs. non-precious usage patterns represented by all of the other cases not included in the data were substantially different from those covered by the data provided by the participating HIAA member companies.

Third, it is possible that a much higher percentage of uninsured crown-and-bridge work involved non-precious metals than those that were covered by insurance, simply because of the price differential that would have to be charged directly to the patients.

Unfortunately, none of these explanations—separately or together--seem sufficiently adequate to explain any or all of the inconsistencies. Therefore, it has been suggested that some of the non-statistical causes might be considered for further examination and analysis.

There is one critical but as-yet undisclosed issue: that of an acceptable working classification of all of the metals and materials involved. It would appear that the inconsistencies observed might stem in part from the misuse and misunderstanding of the current classification by all of the groups and interests involved. This area needs to be identified, addressed and clarified. Once that is done, and the data collected and revised on the basis of it, the entire problem may well be seen in a clearer context that will help explain some of the inconsistencies. Included in this investigation would be such areas as the relationship of the dental profession to such support organizations as dental laboratories, with respect to the prescription and disclosure of materials for prostheses.

It has become an accepted fact that over the ages--up to and including today, despite our incredible technology--that the performance of gold

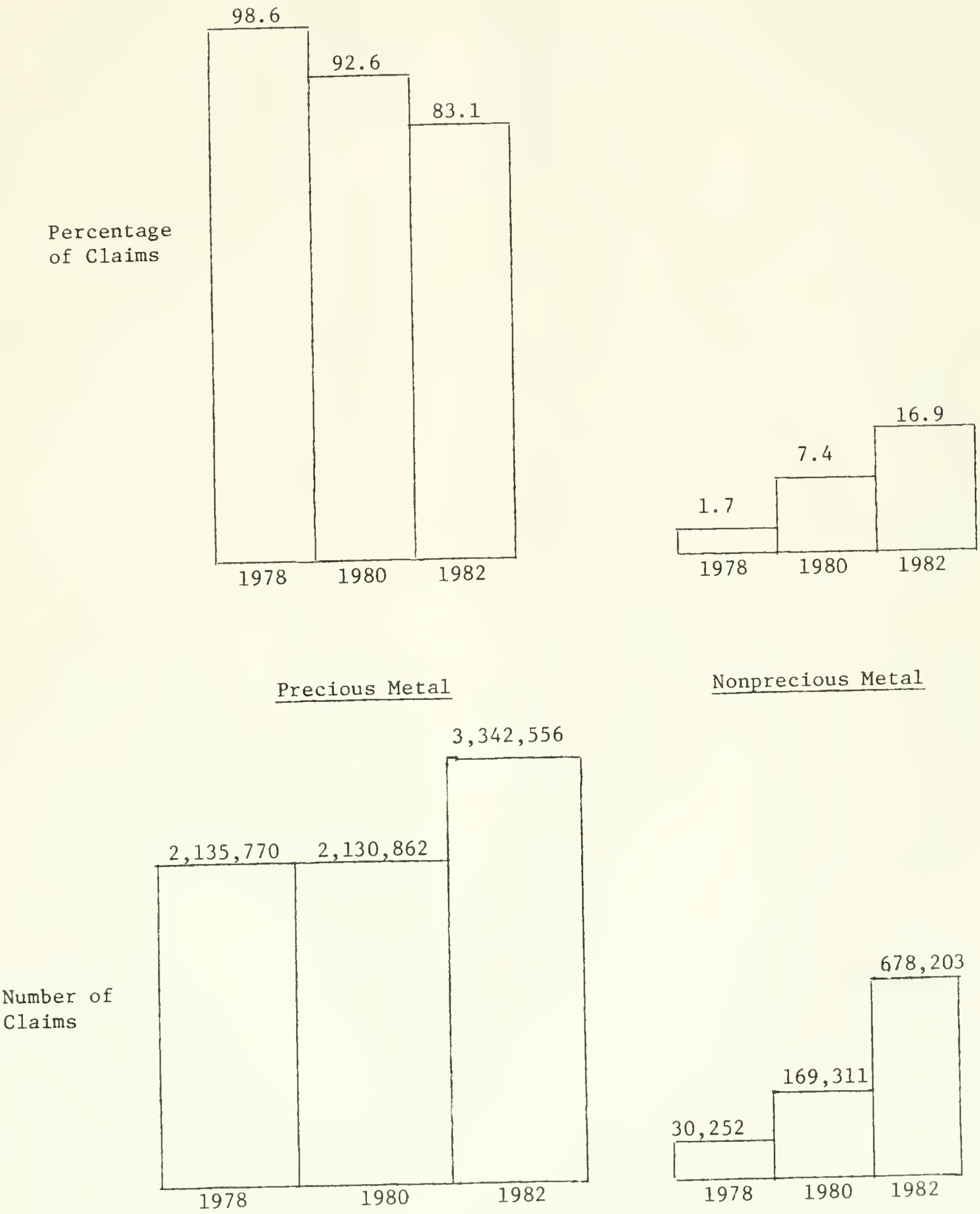
cannot be replaced. However, as new materials are developed, and gold, silver and other precious and semi-precious metals can be processed and utilized in an ever-increasing number of ways, there is an increasing need that these materials be clearly identified. This must be done not only scientifically, but statistically and in socio-economic and political terms which are consistent with their use.

TABLE 1 - INSURANCE CLAIMS BY METAL AND YEAR*

	Precious Metal			Non-Precious Metal		
Procedure	1978	1980	1982	1978	1980	1982
Porcelain Crowns	876,582 (98.3)	1,012,895 (91.3)	1,741,684 (81.9)	14,754 (1.7)	96,412 (8.7)	384,874 (18.1)
Full Cast Crowns	489,140 (99.0)	413,024 (95.1)	642,018 (89.2)	5,122 (1.0)	21,455 (4.0)	77,636 (10.8)
Plastic Crowns	60,824 (98.8)	37,129 (94.5)	54,952 (92.8)	728 (1.2)	2,168 (5.5)	4,270 (7.2)
Porcelain Abutment	320,702 (98.4)	336,199 (91.9)	445,232 (79.9)	5,206 (1.6)	29,773 (8.1)	112,196 (20.1)
Full Cast Abutment	81,982 (98.8)	64,439 (95.3)	82,145 (87.7)	998 (1.2)	3,179 (4.7)	11,512 (12.3)
Plastic Abutment	26,370 (98.9)	14,891 (93.1)	10,467 (82.7)	302 (1.1)	1,100 (6.9)	2,195 (17.3)
Porcelain Br. Pont.	219,482 (98.9)	213,905 (94.4)	307,790 (80.1)	2,432 (1.1)	12,787 (5.6)	76,448 (19.9)
Full Cast Br. Pont.	39,730 (98.7)	27,256 (94.7)	48,562 (86.9)	528 (1.3)	1,534 (5.3)	7,297 (13.1)
Plastic Br. Pont.	20,958 (99.1)	11,124 (92.5)	9,716 (84.6)	182 (0.9)	903 (7.5)	1,775 (15.4)
TOTAL	2,135,770 (98.6)	2,130,862 (92.6)	3,342,566 (83.1)	30,252 (1.4)	169,311 (7.4)	678,203 (16.9)

* The 1978 figures are estimated from the first half figures of that year. Percentages for year are in parentheses.

TABLE 2 - TOTAL CROWN-AND-BRIDGE CLAIMS IN THE U.S.



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